

### **Remarks**

Claims 1-15, 17-22, 24, 25 and 27-34 are pending in the application. Claims 1-15, 17-22, 24, 25, and 27-34 stand rejected. Claim 8 is amended. No new subject matter is added. Claims 1-15, 17-22, 24, 25 and 27-34 are now pending in the application. Reconsideration and allowance of the pending claims is requested in light of the above amendments and the following remarks.

### ***Claim Rejections under 35 U.S.C. 103***

Claims 1-12, 13-14, 17, 20, 24-25 and 30-34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shenoy, et al. (U.S. Publication No. 2003/0223425 A1) in view of Yavatkar, et al. (U.S. Publication No. 2003/0128668 A1) and further in view of Moberg, et al. (U.S. Patent No. 6,697,872). The applicant traverses the rejections.

Regarding claim 1, the claim recites “the line card is configured to filter mal-formed, illegal and duplicate update messages from gateway peers.” The Office Action acknowledges that this feature is not taught in Shenoy or Yavatkar, but then proposes that this feature is taught in Moberg at col. 4, lines 43-67 (*see* Office Action, page 11). The applicant respectfully disagrees. The cited portion of Moberg simply states that a line card processor can examine a packet to verify its validity. Moberg does not provide any further explanation of how the validity of a packet is determined, and specifically Moberg does not teach that such validity is based on mal-formed, illegal, or duplicate update messages. Further, the cited portion of Moberg specifically refers to the processing of data packets; not update messages from gateway peers. Consequently, Moberg does not teach this feature of claim 1 and thus does not remedy this deficiency of Shenoy and Yavatkar. Therefore, claim 1 is allowable over the combination of Shenoy, Yavatkar, and Moberg and allowance is respectfully requested. Dependent claims 2-7 are likewise allowable.

Further regarding claim 7, the claim recites “the backplane further comprising a network.” The Office Action acknowledges that Shenoy does not teach this feature, but then proposes that Yavatkar teaches this feature at backplane 26 (*see* Office Action, page 9). The applicant respectfully disagrees. The backplane 26 of Yavatkar is a physical backplane in a single router (*see* Yavatkar, FIG. 2 and paragraphs [0014-0019]). Yavatkar does not teach that the backplane 26 is a network or even that the line cards and control card can be located remotely from each other. Consequently, Yavatkar does not teach this feature and does not remedy this deficiency of Shenoy.

For at least this additional reason, claim 7 is allowable over the combination of Shenoy, Yavatkar, and Moberg and allowance is respectfully requested.

Regarding claim 8, the claim is amended to clarify that the line card announces routes to the peer gateways. Shenoy does not teach this feature because Shenoy states that “forwarding information is generated by the processors...and managed centrally at the primary control module” (*see* Shenoy, paragraph [0022]). Shenoy goes on to describe how instances of this forwarding information are provided to the line cards by the primary control module (*see id.*). Thus, this portion of Shenoy actually teaches that forwarding information is generated at either the control card or line cards, but that such information is only sent to the line cards from the control card; not from a line card to another router. Therefore, Shenoy does not teach this feature of the claim, which specifically refers to a line card announcing routes to peer gateways. Consequently, claim 8 is allowable over the combination of Shenoy, Yavatkar, and Moberg as the combination does not teach all of the features of the claim. Dependent claims 9-15 and 17 are likewise allowable.

Further regarding claim 10, the claim recites “determining if the packet is a malformed packet.” The Office Action proposes that this feature is taught in Moberg, similar to claim 1 discussed above. As discussed above with respect to claim 1, Moberg does not teach this feature. For at least this additional reason, claim 10 is allowable over the combination of Shenoy, Yavatkar, and Moberg and allowance is respectfully requested.

Further regarding claim 11, the claim recites “applying a packet filter to the packets.” The Office Action proposes that this feature is taught in Moberg because it teaches that after validation, a packet is processed (*see* Office Action, page 11). The applicant respectfully disagrees. Although Moberg does teach that a packet is processed at the line card, it does not teach that a packet filter is applied to the packet. For at least this additional reason, claim 11 is allowable over the combination of Shenoy, Yavatkar, and Moberg and allowance is respectfully requested.

Further regarding claim 12, the claim recites “applying an address filter to the packets.” The Office Action proposes that this feature is taught in Moberg because it teaches that a line card examines the address of a packet (*see* Office Action, page 12). The applicant respectfully disagrees. Although Moberg does teach that a line card examines the address of a packet, it does not teach that an address filter is applied to the packet. Specifically, Moberg merely teaches that the line card examines the address to determine which card should process the packet (*see* Moberg, col. 4, lines 49-53). Therefore, Moberg does not teach applying an address filter to a packet. For at least this additional reason, claim 12 is

allowable over the combination of Shenoy, Yavatkar, and Moberg and allowance is respectfully requested.

Further regarding claim 13, the claim recites “transmitting data related to valid updates from the peer gateways.” The Office Action proposes that this feature is taught in Shenoy at paragraph [0027] (*see* Office Action, page 5). The applicant respectfully disagrees. The cited portion of Shenoy simply teaches that a line card can communicate with a control card; it does not describe the substance of such communication. At paragraph [0033] Shenoy provides more detail on what information is exchanged between the line card and control card, but it does not mention any valid updates from peer gateways (all of the described communications take place between operating systems in the same router). Consequently, Shenoy does not teach this feature of the claim. For at least this additional reason, claim 13 is allowable over the combination of Shenoy, Yavatkar, and Moberg and allowance is respectfully requested.

Regarding claim 25, the claim recites “configuring the line cards.” The Office Action proposes that this feature is taught in Shenoy by the phrase “receiving traffic into the network node” at paragraph [0020] (*see* Office Action, page 6). The applicant respectfully disagrees. The cited portion of Shenoy actually refers to the functionality provided by the line cards; it does not make any mention of the line cards being configured. The remaining disclosure of Shenoy does not remedy this deficiency. Consequently, the combination of Shenoy, Yavatkar, and Moberg does not teach this feature of the claim.

Claim 25 also recites “providing a routing table and policy data to each line card.” The Office Action proposes that this feature is taught in Shenoy by the phrase “the line card processors 118 are configured for routing information etc” at paragraph [0022] (*see* Office Action, page 6). The applicant respectfully disagrees. The cited portion of Shenoy actually refers to how forwarding information is managed between the line and control cards. The applicant does not find the quoted language anywhere in this portion of Shenoy or any other language referring to providing policy data to a line card. Consequently, the combination of Shenoy, Yavatkar, and Moberg does not teach this feature of the claim.

Claim 25 further recites “registering a control portion of a protocol to be executed by the control card with a central registration point.” The Office Action proposes that this feature is taught in Yavatkar at FIG. 3 and the accompanying description (*see* Office Action, page 10). The applicant respectfully disagrees. FIG. 3 and the accompanying description of Yavatkar actually describes how routers can exchange messages without having packets forwarded to the respective control planes (*see* Yavatkar, paragraph [0021]). Yavatkar does

not teach that any control portions are registered with a central registration point. Neither of the routers in FIG. 3 of Yavatkar is a central registration point because they are both identical routers running the distributed control protocol. Therefore, Yavatkar does not teach this feature of the claims. Consequently, the combination of Shenoy, Yavatkar, and Moberg does not teach this feature of the claim.

For at least the reasons identified above, claim 25 is allowable over the combination of Shenoy, Yavatkar, and Moberg as the combination does not teach all of the features of the claim. Dependent claims 27-29 are likewise allowable.

Further regarding claim 27, the claim recites “registering the control portion with a distributed control plane architecture infrastructure module.” The Office Action proposes that Shenoy teaches this feature because it teaches a distribution engine that manages the distribution of forwarding information (*see* Office Action, page 6). The applicant respectfully disagrees. As the Office Action acknowledges, the distribution engine of Shenoy manages distribution of forwarding information (*see also* Shenoy, paragraph [0033]); not registration of the control portion of a protocol. Shenoy does not teach any other elements registering the control portion of a protocol. Therefore, Shenoy does not teach this feature of the claim. For at least this additional reason, claim 27 is allowable over the combination of Shenoy, Yavatkar, and Moberg and allowance is respectfully requested.

Regarding claims 30-34, the claims recite features similar to those discussed above with respect to claim 8 and its dependent claims. Consequently, claims 30-34 are allowable over the combination of Shenoy, Yavatkar, and Moberg for at least the same reasons discussed above with respect to claim 8.

Claims 18-19, 21 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shenoy, et al. (U.S. Publication No. 2003/0223425 A1) in view of Yavatkar, et al. (U.S. Publication No. 2003/0128668 A1) and Moberg, et al. (U.S. Patent No. 6,697,872 B2) as applied to claim 18 above, and further in view of Macera, et al. (U.S. Patent No. 5,490,252). The applicant traverses the rejections.

Regarding claim 18, the claim recites “transmit data resource data to the control card.” The Office Action proposes that this feature is taught in Shenoy because it teaches “forwarding information to control module” (*see* Office Action, page 14). The applicant respectfully disagrees. Shenoy specifically teaches that forwarding information is exchanged between the line cards and the control card. Shenoy does not teach that data resource data is sent to the control card. Therefore, Shenoy does not teach this feature of the claim.

Claim 18 also recites “receiving configuration information from the control card.” The Office Action proposes that this feature is taught in Shenoy because the line card receives traffic into the network node (*see* Office Action, page 14). The applicant respectfully disagrees. Specifically, the fact that the line cards in Shenoy receive traffic does not necessarily mean that the line cards receive configuration information from a control card. As an example, the line cards could maintain their own configuration information without receiving any configuration information from the control card. Shenoy does not explicitly teach that the line cards receive configuration information from the control card and the applicant does not find any suggestion of such in Shenoy. Therefore, Shenoy does not teach this feature of the claim.

Claim 18 further recites “establishing connections with exterior gateway peers.” The Office Action proposes that this feature is taught in Shenoy because it teaches that the line cards have ports to terminate links (*see* Office Action, page 14). The applicant respectfully disagrees. Specifically, the fact that the line cards in Shenoy have ports does not necessarily mean that the line cards establish connections with exterior gateway peers. Shenoy does not make any mention of exterior gateway peers, or more specifically, establishing connections with exterior gateway peers. Therefore, Shenoy does not teach this feature of the claim.

Also, claim 18 recites “transmitting only valid Border Gateway Protocol data to the control card.” The Office Action proposes that this feature is taught in Shenoy because it teaches that the line cards communicate with the control module (*see* Office Action, page 14). The applicant respectfully disagrees. Specifically, the fact that the line cards in Shenoy communicate with the control module does not necessarily mean that the line cards transmit only valid BGP data to the control module. To the contrary, Shenoy actually teaches that the line cards can transmit many types of data to the control module (*see* Shenoy, paragraph [0017]). Further, Shenoy does not teach that the line cards distinguish between valid and invalid data packets in determining which data packets to forward to the control module. Therefore, Shenoy does not teach this feature of the claim.

Further, claim 18 recites “registering an offload portion of a protocol to be executed by the line card with a central registration point.” As discussed above, with respect to claim 25, Yavatkar does not teach this feature as the Office Action proposes. The same arguments presented above with respect to claim 25 apply here.

Claim 18 also recites “running output policies for each of the gateway peers.” The Office Action proposes that Moberg teaches this feature because it teaches that a line card verifies the validity of a packet (*see* Office Action, page 15). The applicant respectfully

disagrees. The verification process pointed to in the Office Action refers to a line card processing packets received locally; it does not refer to running output policies for gateway peers. There is no mention anywhere else in Moberg of a line card running output policies for gateway peers. Consequently, this feature of the claim is not taught in Moberg.

Claim 18 further recites “initializing a line card.” The Office Action proposes that this feature is taught in Macera because it teaches that “each module is automatically self-configured when inserted into the backplane” (*see* Office Action, page 15). The applicant respectfully disagrees. Macera specifically teaches that a BES includes multiple modules that can be ‘hot swapped’ (*see* Macera, col. 7, lines 25-29). However, Macera does not teach that any of these components are a line card. Macera does not actually give any details of what these modules might be; only that they can be swapped out. Consequently, Macera does not teach this feature of claim 18.

Finally, claim 18 recites “performing Border Gateway Protocol functions at the line card.” The Office Action proposes that Macera teaches this feature because its BES supports BGP (*see* Office Action, page 15). The applicant respectfully disagrees. Specifically, there is nothing in Macera to indicate that its BES is a line card or includes a line card. Therefore, the fact that Macera’s BES supports BGP does not teach performing BGP functions at a line card, as recited in the claim. Consequently, Macera does not teach this feature of claim 18.

For each of the reasons identified above, claim 18 is allowable over the combination of Shenoy, Yavatkar, Moberg, and Macera as the combination does not teach all of the features of the claim. Therefore, allowance of claim 18 and its dependent claims, 19-22 and 24, is respectfully requested.

Further regarding claim 19, the claim recites “registering with a distributed control plane architecture infrastructure module.” As discussed above with respect to claim 27, the combination of Shenoy, Yavatkar, and Moberg does not teach this feature. Macera does not make up for this deficiency. For at least this additional reason, claim 19 is allowable over the combination of Shenoy, Yavatkar, Moberg, and Macera and allowance is respectfully requested.

Further regarding claim 21, the claim recites “filtering mal-formed, illegal and duplicate update messages from the gateway peers.” As discussed above with respect to claim 1, these features are not taught in the combination of Shenoy, Yavatkar, and Moberg. Macera does not make up for this deficiency. For at least this additional reason, claim 21 is allowable over the combination of Shenoy, Yavatkar, Moberg, and Macera and allowance is respectfully requested.

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Shenoy, et al. (U.S. Publication No. 2003/0223425 A1) in view of Yavatkar, et al. (U.S. Publication No. 2003/0128668 A1) and Moberg, et al. (U.S. Patent No. 6,697,872 B2) as applied to claim 8 above, and further in view of Harvey, et al. (U.S. Publication No. 2003/0140167 A1). The applicant traverses the rejection.

Claim 15 depends from claim 8 and thus contains all of the features of claim 8. Consequently, claim 15 is allowable over the combination of Shenoy, Yavatkar, Moberg, and Harvey at least because any claim that depends from a nonobvious independent claim is also nonobvious.

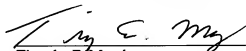
Claim 15 recites "generating responses required by the incoming packets." The Office Action acknowledges that this feature is not taught in Shenoy, Yavatkar, and Moberg, but then proposes that this feature is taught in Harvey at paragraph [0030] (*see* Office Action, page 17). The applicant respectfully disagrees. The cited portion of Harvey merely teaches that an acknowledgement message can be sent every time a packet is received at a routing module. Harvey does not teach that such an acknowledgment message was required by the incoming packet. Harvey appears to teach that its system does not distinguish between incoming packets requiring an acknowledgement and those that do not. Instead, in Harvey, all incoming packets generate an acknowledgment message. Therefore, Harvey does not teach this feature of the claim. For at least this additional reason, claim 15 is allowable over the combination of Shenoy, Yavatkar, Moberg, and Harvey.

Reconsideration and allowance of all claims is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

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